Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently amended) A braking system for a shaft mounted for rotation, the braking system comprising:

a brake disc coupled to the shaft for rotation therewith, the disc including a disc face having a plurality of disc plateaus positioned around the circumference of the disc, each disc plateau including a pair of disc ramps disposed at opposite ends of the disc plateau, each of the disc ramps extending between the disc face and a top surface of the disc plateau at an angle of approximately 10° relative to the disc face;

a brake plate mounted to be relatively stationary, the brake disc being rotatable with respect to the brake plate, the brake plate including a plate face positioned substantially parallel and adjacent to the disc face and including a plurality of plate plateaus corresponding to the number of disc plateaus, each plate plateau including a pair of plate ramps disposed at opposite ends of the disc plateau, each of the plate ramps extending between the plate face and a top surface of the plate plateau, the plate ramps being angled relative to the plate face at approximately the same angle at which the disc ramps are angled relative to the disc face, the plate plateaus defining recesses between consecutive plate plateaus that are dimensioned to correspond to the disc plateaus such that the disc plateaus mate with the recesses; and

a spring, the disc face and the plate face being biased against each other by the spring to cause a braking force from sliding contact between the disc plateaus and the plate plateaus and to cause a locking force caused a locking force when said plateaus mate with the recesses.

2. (Currently amended) The braking system of claim 1, wherein the disc ramp ~~is angled approximately 10° relative to the disc face~~ extends between the disc face and a top surface of the disc plateau at an angle of between approximately 5° and 20°.

3. (Previously presented) The braking system of claim 1, wherein the plurality of disc plateaus comprises three disc plateaus angularly disposed about 120° from each other, the disc plateaus being sized to collectively cover about one-half of the circumference of the disc; and wherein the plurality of plate plateaus comprises three

plate plateaus angularly disposed about 120° from each other, the plate plateaus being sized to collectively cover about one-half of the circumference of the plate.

4. (Original) The braking system of claim 3, wherein the disc ramp is angled approximately 10° relative to the disc face.

5. (Original) The braking system of claim 4, wherein the plate ramp is angled approximately 10° relative to the plate face.

6. (Original) The braking system of claim 1, wherein the disc ramp is angled at an angle of between approximately 5° and 20°.

7. (Previously presented) A braking system for braking a rotatable shaft, the system comprising:

a brake plate moveable between an engaged position and a retracted position, the brake plate including a plate face having a plurality of plate plateaus positioned around the circumference of the brake plate, each plate plateau including a pair of plate ramps disposed at opposite ends of the plate plateau, each of the plate ramps extending between the plate face and a top surface of the plate plateau, the plate ramps being angled at an angle of between approximately 5° and 20° relative to the top surface;

a coil that is powered to create a magnetic field to move the brake plate between its engaged and retracted positions;

a brake disc mounted to the shaft for rotation relative to the brake plate, the brake disc including a disc face positioned substantially parallel and adjacent to the plate face and including a plurality of disc plateaus, each disc plateau including a pair of disc ramps disposed at opposite ends of the disc plateau, each of the disc ramps extending between the disc face and a top surface of the disc plateau, the disc ramps being angled at an angle of between approximately 5° and 20° relative to the disc face, the disc plateaus defining recesses between consecutive disc plateaus that are dimensioned to correspond to the plate plateaus such that the plate plateaus mate with the recesses; and

a spring, the disc face and the plate face being biased against each other by the spring.

8. (Original) The braking system of claim 7, wherein the number of plate plateaus is equal to the number of disc plateaus.

9. (Original) The braking system of claim 8, wherein the plate ramps are angled at the same angle as the disc ramps.

10. (Original) The braking system of claim 9, wherein there are three plate plateaus and three disc plateaus.

11. (Original) The braking system of claim 10, wherein the plate ramps and the disc ramps are angled at approximately 10°.

12. (Cancelled)

13. (Original) The braking system of claim 7, wherein there are three plate plateaus and three disc plateaus.

14. (Original) The braking system of claim 7, wherein the plate ramps and the disc ramps are angled at approximately 10°.

15. (Currently amended) A method of braking a rotating shaft, the method comprising:

attaching the shaft to a brake disc, the brake disc having a disc face with shallow disc plateaus protruding from it, each disc plateau including a pair of disc ramps disposed at opposite ends of the disc plateau, each of the disc ramps extending between the disc face and a top surface of the disc plateau at an angle of approximately 5° to 20° relative to the disc face; and

providing a brake plate with a plate face and a spring force to selectively engage the plate face of the brake plate with the disc face of the brake disc, the plate face having shallow plate plateaus protruding from it, each plate plateau including a pair of plate ramps disposed at opposite ends of the plate plateau, each of the plate ramps extending between the plate face and a top surface of the plate plateau, the plate ramps being

angled relative to the plate face at approximately the same angle at which the disc ramps are angled relative to the disc face, the spring force being chosen to permit the disc plateaus to slide over the plate plateaus in a dynamic braking portion of the method and prevent sliding of the disc plateaus over the plate plateaus in a locking portion of the method.

16. (Original) The method of claim 15, wherein there are three disc plateaus and three plate plateaus.

17. (Previously presented) The braking system of claim 1, wherein the plate face is biased toward the disc face by the spring.

18. (Previously presented) The braking system of claim 7, wherein the plate face is biased toward the disc face by the spring.

19. (Previously presented) The braking system of claim 7, wherein the spring engages the brake plate and biases the plate face toward and against the disc face.

20. (Previously presented) The method of claim 15, further comprising applying the spring force to the brake plate and biasing the plate face toward and against the disc face with the spring force.

21. (Previously presented) The method of claim 15, wherein each disc plateau includes a pair of disc ramps disposed at opposite ends of the disc plateau, each of the disc ramps extending between the disc face and a top surface of the disc plateau, and wherein the plurality of plate plateaus correspond to the number of disc plateaus and each plate plateau includes a pair of plate ramps disposed at opposite ends of the plate plateau, each of the plate ramps extending between the plate face and a top surface of the plate plateau, the disc ramps being angled approximately 10° relative to the disc face and the plate ramps being angled approximately 10° relative to the plate face.